

THE
INRICHMENT
Of the Weald of
KENT:

O R,
A Direction to the Husband-man,
for the true Ordering, Manuring, & Inriching
of all the Grounds within the Wealds of KENT,
and SUSSEX; and may generally serve for all
the Grounds in ENGLAND of
that nature: As,

1. *Shewing the nature of all Wealdish Grounds, comparing it with the soyle of the Shires at large.*
2. *Declaring what the Marle is, and the severall sorts thereof, and where it is usually found.*
3. *The profitable use of Marle, and other rich Manuring, as well in each sort of Arable Land, as also for the increase of Corne and Pasture through the Kingdome.*

Painfully gathered for the good of this Iland, by a man
of great Eminence and Worth, but revised, enlarged, and
corrected with the consent, and by conference
with the first Author.

By GERVASE MARKHAM.

L O N D O N,

Printed by Eliz. Purflow, for John Harrison, and are to be
sold at his Shop at the signe of the Holy-Lambe at
the East-end of Pauls, 1649.



TO THE
HONOURABLE
Knight, Sir **GEORGE RIVERS**
of Chafford, in the Countie of
KENT.

S I R,



*Ad I no scale (more than this
bare and plaine moulded Epistle ,
(by which to come to your worthy
eares , yet in respect of the ho-
nest Liverie which it carryes ,
(being necessarie and husbandly
Collections , especially gathered
for the Countrey and Soyle where-
in you live) I know it cannot
chuse but find both favour and
mercie in your acceptation ; but
when I call into my consideration , the great worthinesse of your
experience in this and all other the like affaires, which tend to the
generall benefit of the Common-wealth , and weigh the Excel-
lencie of your Wisedome, Judgement, Bountie, and Affect-
ion unto Hospitalitie (which give both strength and advance-
ment to projects of this nature) I could not but take unto my
selfe a double encouragement , and boldly say unto this Worke
which I offer unto to your goodnesse , Goe and approach with all
thy*

The Epistle Dedicatorie.

thy sweetnesse before him, he that so perfectly knowes all which thou canst or wouldst discover ; he that is able both to correct and amend anything that is imperfect in thee ; he, for Vertues sake, will never forsake thee. Beloeve me (worthy Sir) should this Subject wish it selfe a Patron, I doe not thinke it could wish beyond you ; for you are a Volume full of all that of which it intreateth : witnesse your yeares, your supportation of the poore, and your continuall imployments ; with any of which there is not (of your rank) a second living in your Countrey, to walke hand in hand with you : Being then (deare Sir) the oldest and best friend to your Countrey, forsake neither, nor this which comes to serve it ; and though in this Glasse some lineaments may appeare imperfect, yet by the helpe of your favour (though little be exact or most excellent) nothing shall be grosse or unworthie the survey of your worthier patience. And so I rest,

Yours to be commanded,

GERVASE MARKHAM.



A Discourse of the Weald of Kent; and a comparison of the Arable Lands therein, with the other parts of the Shires. Together with some necessary counsels for the ordering and enriching of the marleable Lands in the Weald; or generally in any part of this Kingdom.

THe Weald of Kent is the lower part of that Shire, lying on the South side thereof, and wards adjoyneth to the Weald of *Sussex*, to the West. Further Additions.

This Weald, both in *Kent* and *Sussex*, was sometimes all (or the most part) Woody, Wilde, and (in the first times) uninhabited; and from thence tooke the name of Weald from the Saxon word, *Weale*, or *Yeale*, or *weald*, which signifieth a Woody Country, or Forrest-like ground. The *Brittans* called it *Andred*, which signifieth Greatnesse or Wonderful, and in Latine it was called *Saleus Andred*, (that is to say) the Chase or Forrest of *Andred*, by reason of the great circuit, or large bounds thereof.

Touching the true boundary or limits of this Weald, there hath bin divers opinions, and most of them various, and much differing both in place and quantity; but that which is the neereft and best allied unto truth, both according to the opinions of *Affertus Menevensis*, *Henry of Huntingdon*, & others of most credible report, is, that it extendeth from the city of *Winchelsea* in *Sussex*, an hun-

dred and twenty miles in length towards the West; and 30. miles in breadth towards the North. Now, although this report be most agreeing unto veritie, yet who knows not that curiosity may raise up many objections to withstand it; & therefore M. *Lambert* in his Perambulation of *Kent*, hath prescribed the best & most infallible way to find out the true & certain bounds of this Weald, to be only by Jewry, or the Verdict of 12. men impannelled for that purpose, either in case of controverſie, or other particular search; and this hath been in these later times brought forth most plentifully: for it hath bin found by divers late Verdicts, upon special and most necessary occasions, that the Weald of *Kent* is truly M. *Lamberts* second step in his Perambulation of *Kent*, reaching from *Winchelsey* in *Suffex*, & that hil there, unto the top of *Rivers* hill in *Kent*; & neither farther towards *London*, nor shorter towards *Tunbridge*; which agreeth so perfectly with the former limitations, that both may be received as most true and sufficient.

This Weald was for many yeares held to be a wilde Desert, or most unfruitfull Wildernesse (as write the authors before mentioned) & indeed such is the nature and disposition of the soyl thereof to this very day: for it will grow to frith or wood, if it be not continually manured and laboured with the plough, and kept under by tillage, so as it may truly be said of it, *Incolta parantur vomere Sylva*. It is throughout (except in very few places adjoyning to brooks or rivers) of a very barren nature, & unapt either for pasturage or tillage, until that it be holpen by some maner of comfort, as dung, marl, fresh earth, fodder, ashes, or such other refreshings; and that seemeth to have beene the cause for which in old time it was used as a Wildernesse, & kept for the most
part

part with herds of Deer, and droves of Hogs, as is specified in divers historicall relations.

And as there be yet remaining in *Sussex* divers great forrests, and sundry commons or wastes, having five or six miles in length, which for the most part are not fit to be manured for corn, & yeeld but little profit in pasture; so have there bin also in *Kent* (within our memory) a great number of woody and over-grown grounds, converted of late to pasture & tillage, even after such a manner as in the said Perambulation is testified, where it is said. That although the Weald of *Kent* belonged to sundry known owners long since, yet was it not then allotted into particular Tenancies, as the other parts of the shire were, but it was, in proceſſe of time, by little and little gained, as men were contented to inhabit there, and to rid it of the wood. And hereof it is also, that besides sundry whole parishes which be named dens or low places, as *Tenderden*, *Marden*, *Beneden*, and sundry others, there be moreover many smaller portions, almost in every part of the Weald of *Kent*, which he likewise called dens; as the den of *Cranebrook* in *Cranebrook*, the den of *Hawkhurst* in *Hawkhurst*, and such others; the which (as it seemeth) were at the first undertaken to be manured by sundry particular persons, whose names were then taken for those very dennes, and continued many yeares together, as by ancient evidences it doth yet appear, howsoever the age of long time hath now almost worn & consumed them all out of knowledge. Neither doth the Weald of *Kent* contain so many great manors or courts (for the proportion of the largenesse) as the rest of the Shire doth, but was appertaining, for a great part thereof, to sundry of those manors which do lye at large disperſed thorow the Shire, whereof each one

had a great portion in the Weald, which both in the book of Dooms-day, and in sundry the court Rols, and Remals, passeth by the name of Weald, and *Silva Porcorum*, or swinegats, which were granted to divers of the farmers & owners of sundry tenacies, which did belong unto those dens, and other lands within the Weald.

And albeit these dens be for the most part good large portions of lands, that be now broken into many severall possessions, so as the same one Den sufficeth 20. householders at this day, yet it is very likely that each man at the first had his severall den wholly & unbroken, whereof he & his posterity beareth name, until that the same was by the custome of *Gavilkind*, by sale or by exchange divided & distributed amongst others into parts, as we do now see them. But howsoever this Weald be of it self unfruitful (as I said) & of a barren nature, yet so it hath pleased the providence of the Almighty to temper the same, that by the benefit of Margle or Marl (as it is commonly called) it may be made not only equall in fertility with the other grounds of the shire, as well for Corn, as Grasse, but also superior to the more and greater part of the same. The which manner of bettering the grounds is not now newly discovered, but was the ancient practice of our forefathers many yeares agoe, as by the innumerable Marle-pits digged & spent so many yeares past, that trees of 200. or 300. yeares old, doe now grow upon them, it may most evidently appeare, besides the which we have mention of Marl in books of gainage or husbandry, that were written in the daies of *K. Edward* the 2. or before, howbeit the same manner of tillage, by meanes of the civill warres, maintained many yeares as well in the time of the Barons warres, as of the wars betweene the house of *Yorke*, and the family of *Lancaster*,

The use of
Marle is an-
cient.

Marling was
discontinued,
and is now re-
vived.

was so given over, and gone out of use, untill these 30. or 40. years, that it may be said to have bin then newly born and revived, rather than restored, because the very true art of enriching the ground by *Marl*, seemeth to lye hidden in part, as yet not to be discovered to the full: for in this short time we have seen many arable grounds, which for sundry years after the marling of them, have plentifully borne Wheat & other Graine, to be now become unfruitfull, and so will they continue, albeit they should be now marled againe. And this commeth to passe by the ignorance of the right manner of ordering the *Marle*, which is as strong & chearfull as ever it was before, howsoever it worketh not his naturall effect, through the unskilfulnes of the Husbandman, that both wasteth the *Marle*, and loseth with all his time, his labour, his cost, and the profit of his ground. I cannot deny but a man shal see some grounds of nature, fir to take *Marle*, and of situation so neer to *Marle*-pits long time opened, that they might be marled plentifully with little charge, and have been heretofore marled indeed, and yet the same to lye now unploughed, and not only barren of themselves, but also unapt for *Marle*, and incapable of amendment by Tillage: but I must say withall, that albeit the men in those former Ages had the right ordering of *Marl*, yet were they not all good Husbands alike, neither doth the Field joy alike under the Farmer, and under the very Owner of the same, the one seeking the very uttermost gaine that may be made during his short interest, and the other endeavouring to perpetuate his comodity, even to the end of his estate, which hath no end at all, so that through unskilfulnes of the one, & greedines in others, the ground may sooner be cramm'd to death with *Marle*, then it shall be made the better or

fatter by it. The reason whereof I will reserve untill that I have cause to teach in particular, after what manner and measure the ground is to be marled. In the meane while, I will open the nature and conditions of this Wealdish ground, comparing it with the Soyl of the shire at large, and afterward declare unto you what the *Marle* is, and what sorts thereof there be usually found in the Weald of *Kent*; and lastly, enter into the true and profitable use thereof, as well in each sort of arable Land, as also for the increase of Corne and Pasture through the Kingdome.

The arable ground of this Weald hath commonly a fleet and shallow mould to be turned up by the plough, so as in many places the dead earth or mould is within three inches of the face of the ground, & in the best places, the good Mould exceedeth not six inches in depth at the most, & therefore it wanteth convenient substance to nourish Corn any long time, but will faint and give over after a Crop or two; for the which reason also, it cannot yeeld any sweet or deep Grasse. Besides this, the Weald hath many copped or hillish grounds, out of which there do many Quits or Springs of water issue, that make it cold & barren; and from these hillocks, the best part of the good Mould is washed down into the Water-courses and Dikes that be made to divide and drain the Land. Furthermore, the Weald is divided into many small inclosures, the biggest sort (for the most part) of which, are between sixteene Acres and twelve in quantity, & thereby hath it many Hedges and Trees, which in unseasonable weather doe keep both the Sun and wind from the Corne, so as for want of that succour and comfort, it groweth, & many times rotteth in the earth, so that it carneth not, nor eareth, nor prospereth

reth not kindly many times. And these small Clofes are caused by this, that men are not able to Marle any great part or quantity of ground at once; and having marled a little, they are desirous to sow it with corn: for the preservation wherof, as also for draining it, they are inforced to make so many and small severalls: for all which reasons it is plain, that there is little good arable Land there, & rarely any good Pasture, those only places excepted, which are amended by irrigations of floods, which there is called flowing & over-flowing. Contrarywise, the arable land of the Shire at large, hath a deep and fat Mould of good earth, that is able to bear five or six good Crops together without intermission; and after three or four years rest, will do the like again, and may so interchangeably keep that course for ever: yea, there be many grounds that are sowed without ceasing, because the Mould is so deep, that when the upper part thereof beginneth to faint and be weary, men can adde some strength of Cattell, and with the Plough go deeper, and fetch up a fresh Mould that will continue for a long season. Furthermore, this arable ground is a hollow dry ground, for the most part, on a deepe Clay, that by tillage, & the weather, will become dry and spongy, so as the Rain there washeth in the fat of the earth, the rather, because it is not so hillish & sliding as the Weald, but more levell, even, and champion also, by which the Sunne and Wind doe dry the Corne, and doe make it both earne or eare well, and yeeld a purer flowre then that which is sowed in wet, and hath long time lye before it be dried againe. But for as much as the great odds between these two sorts of grounds, may be made even by the helpe of *Marle*, if it be rightly ordered, as I said, I will now shew you what it is, & how many sorts

thereof be found in this Weald of our Country. *Marl* is indeed, as it is in name, the fat or (marrow) of the earth: for so did the *Germans*, and so did our elders the *Saxons*, terme it, of the word *Marize*, which we found *Marron*, and thereof we call it *marling*, when we bestow that fat earth upon our leane ground. *Pliny* saith, That the *Brittans* (meaning us) did use to amend their Land with a certain invention which they called *marga*, that is, the fat of the earth, and it is to be seene in *Conradus Heresbachias*, that the *Germans* doe use it to the same end, and doe call it by the same name till this very day: it is therefore a fat, oily & unctions ground, lying in the belly of the earth, which is of a warm and moist temperature, and so most fertill, seeing that heat and moisture be the father & mother of generation and growth; howbeit this is not a pure & simple marrow (as that is which lieth in our bones) but a juice, or fat liquor mingled with the earth, as is the fat which lieth mixed, and dispersed in our flesh, so as the one may be drawne away, and the other remain, as it shall anon appeare unto you.

Four sorts of
Marle:

1. 2.
3. 4.

Four sorts of *Marle* be found in this Weald, known asunder by the difference of colours, & thereby also differing in degrees of goodnesse one from the other: for there is a gray, a blew, a yellow, and red *Marle*, all which be profitable, if they be earthy & fat, or slippery as soape: and most times little worth, if they be mixed with sand, gravell, or stone. So the blew is reputed the best, the yellow the next, the gray the next, and the red lesse durable then the other three; and yet it is thought the red to be the better, if it be found upon the blew or others. These *Marls* do lye in veines or floores, amongst those hillocks or copped grounds most commonly, whereof I have spoken, and doe oftentimes shew themselves.

selves at the foot of the hill, or about the mid-way, betweene the foot and the top thereof: some of them have over them a cover of ground, which we call Cope, not exceeding seven or eight foot in depth, some lie deeper, and other some do arise, as namely, where the round lyeth not high, and that *Marle* commonly is very good; and there is in diverse leuell grounds good *Marle*.

And as *Marle* is for the most part of these foure colors, so is arable ground for the most part of these four sorts following; that is to say, either a cold, stiffe & wet clay, which is either the cope of the *Marl*, or lyeth neer unto it, and is therefore commonly called, *The Marle Cope ground*, or a *Haifel Mould*, which I count to be one of the best wealdish moulds, being a cōpound mould, and very good for *Marle*, and will quit the cost very well. Then there are two sorts of sandy Mould, the one being a reasonable good kind, but not equal to the haifel mold, for you shal have in divers places of the weald this haifell mould to beare two or three good crops of Wheat being Summer fallowed, together, which you shal hardly have of any sandy ground without mending: but as I said of the better sort of these two kinds of sandy molds, you have commonly very rich Wheat, being well marled, which is not so barren as the other; but this last kind of sandy mould, is a very barren kind of ground, and hath a very fleet mould, and you shal have very heath grow upon it in divers places; and yet being ordered as followeth with *Marle*, will bear both good Corn & Pasture. And now that we may the better understand how to Marl and Manure every of these sorts by it selfe, you must know, that the haifell ground being dry, and not subject to Winter-springs, or tears of water (for, which some call such, A whining or weeping ground)

Figure 50-3 of
Grounds.

1.

2.

3. 4.

ground) is to bee handled thus:

The ordering
of the Half-
Mould.

First, Plough it as deep as you can, with the strength of eight beasts at the least; and be not afraid to Plough up some part of the dead earth that lieth under the upper good Mould, for the Sun, the Rain, the Wind, & the Frost, will in time mellow & amend it; and besides that, the Mould will be the deeper for a long time after, and thereby keepe it selfe the longer from being stiffened with the *Marle*. Then you may bestow 500. Cart-loads (as we call them) of *Marle* upon each acre thereof, every load containing 10. or 12. bushels of eight gallons, and each acre containing 160. rods of 16. foot and a half to a rod. Then also you may chuse whether, at the first breaking up you will sow it with Oates, to kill the Grasse, or else first *Marle* it, and sow it with Wheat, or otherwise Summer-fallow it in the *May* after the Oats, and then *Marle* it, and sow it with Wheat. Upon that fallow or gratten (as we call it) you shall doe well to sow it with Pease, and at *Michaëlmas* following, to sow that Pease-stubble or gratten with Wheat again, which also will be the better, if the Summer wherein it carried Pease, were moyst, because the Pease being rich and thick, do destroy the Grasse, that together with the washing of the fallowes by rain, doth greatly consume the heart & vertue; or, as we call it, the state of the ground. But if that Summer were dry, then is a fallow best, because the Sunne with his heat doth much good to the ground, and inableth it the better to beare out the weather in the Wheat-season ensuing. If you like to sow it, as I said, with Pease, sow them as earely and timely as you may, for they will be so much the sooner harvested, and then also you may Plough or stir your gratten the sooner, whereby it will be the better hardned to beare

out

out the weather in the time of sowing of your Wheat: but I doubt, Pease doth somewhat stiffen it. Two bushels of wheat do suffice for the sowing of an acre hereof, except it be for the first crop, after the new breaking up of the ground; during which time, there is found a worme, called an *Emble*, which in *French* signifieth Corn in the ground, being of colour yellow, and of an inch in length, and will eate some part of the Corn; but if you sow it thick, it will be both small, eared, & thick, and slender of straw, which the raine & wind will beat and hurle downe, and then it will scarcely rise againe; or if it doe, yet through the neernesse of the shadow of the trees and hedges, that in so small closes be many, it will rather rot for want of drying, then come to maturity, that is, to perfect hard, and full grown Corn. After your first marling, you must carefully fore-see, that you Plough not the ground either with deep or broad Furrowes, but fleet and narrow, lest you cast your Marle into the dead Mould; for Marle differeth much from Dung in this behalfe; Dung spendeth it selfe upward, and howsoever deepe it lye, the vertue thereof will ascend: but Marle (as saith *Sir walter Henly*, in his Husbandry) sendeth his vertue downward, and must therefore be kept aloft, and may not be buried in any wise. Furthermore, if your ground be hillish or coppied, it shalbe fit that you make your Ridges 7. or 8. foot broad at the least; for in such falling lands, the more broad furrowes you make, as you must make many, where you make Ridges, the more of your Marle shall be washed and carried into the bottomes. It is good also to draw a crosse or quarter-Furrow, and opening the ends of your land-Furrowes into it, to leave the other ends of your Furrowes stoppod,

that

Note.

that the water-shoot run not all the length of the field. Again, this ground would alwaies be sowne under furrow, and that also before *Michaelmas*, if the season will so permit: for this ground (if it be well husbanded) will be mellow and hollow, or loose, whereby through Raine and Frost, it would sinke downe from the root of the Wheat; if it should be sowne above Furrow, the which being uncovered, must needs be bitten and killed with the cold. It is also very fit that you harrow not this sort of ground too smal, but that you leave the clods as big as a bowl, the which being mouldred with the frost, will both cover and keepe warme what is underneath. Moreover, it shall be good, that upon some faire and dry day, in the beginning of *March*, you put your flock of Sheep into your Wheat, that with their trampling upon it, the Corn may be well & fast closed with the earth, yea, & presently after (if it will bear foot) you may roll it as you doe Barley, whereby both the Clods shall be broken, and the Gratten or stubble shall be more even and ready for the Mower. Generally you must understand, that after you have bestowed your *Marle* in the field, you ought to let it lye unspread abroad, until you be ready to plough, & then immediately after the spreading of it, turn it into the ground with the Plough; for otherwise, if it should lye long spread in the field, the Sun will spend no small part of the fardness thereof, although I know many desire it, because it will be the smaller being burned with the Sun, which I like not. And therefore also no good Husband will carry and spend his dung in the time of Summer, except he doe presently with all plough it into the ground, for although the Mould of the arable Land it selfe will take good, if it be turned to the Sunne, which will both dry
and

and fasten it, yet the matter fareth far otherwise with the *Marle*, from which if the Sun shall draw and suck the fat moisture that maketh the Land fertile, then becommeth it (as *Columella* speaketh) of the worst sort of ground; *Solum siccum, pariter & densum & macrum, quod sive exerceatur, sive cessat, colono refugendum est.* It becommeth (saith he) a dry, thick, and leane Clod, which whether it be tilled or laid to rest, must be forsaken of the husbandman as unprofitable. And now your Haifell-mould being thus marled, plowed, sowne, and manured, you may not charge with Wheat above twice, and then it must rest five or six yeares together; all which time it will beare a very good and sweet Pasture, well set with a white Clover, or three-leaved grasse, most batning and profitable, both for Sheep and Bullocks.

After those yeares ended, it will grow to some Mosse, or will peradventure cast up Brooms, and then it is time to break it up, and sow and handle it as before, for two other Wheat-seasons or crops, leaving it a wheat-gratten or stubble, rather than with an Oat-gratten or stubble, which burneth the Land being marled. Being thus interchangeably sowed and rested, your Haifell mould will continue good arable and pasture, by the space of thirty yeares together; whereas if it should be continually sowed, six, seven, or moe yeares together without rest, it will become utterly unfruitfull, both for Corn and Cattell also. Neither will it any thing availe to marle it over againe when it is so decayed, because the former *Marle* having his juice exhausted by continuall Tillage, whereof the Corne sucketh one part, and the Sunne, Wind and Weather dryeth and wasteth the rest, is but a dead Clod (as I said) that is not capable
of

of new *Marle* to amend it, nor catterh any profitable grasse at all; for prooffe hereof, I my self have seen, that the common earth of High-ways, by treading of Cattell, washing of Raine, and the drying of the Sunne and weather, lay separated from the naturall juice which it had in the pit; and spreading it upon the ground, I saw that the land was not only not amended, but much the worse by it. And now for an end of handling this sort of *Haisell* ground; if it shall appear unto you, that five hundred loads of *Marle* upon the Acre, have clanged, stiffened, and too fast bound your land (as indeed the nature of *Marle* is to bind & to stiffen) then take you some of these waies to help it: either rest it four or five yeares, or fodder upon it before you bring it up with so many Cattell as you may; or take the uppermost part of your Ditches or Fore-lands, or waste places of your fields, which you may mingle with Dung, and which, before you sow your Wheat, you may lay upon your fallow, & stir it in with your plow, and by this you shal both loosen your *Marle*, & refresh your ground: so that within forty yeares the mould of your ground will cleane eate up and swallow the *Marle* that you lay upon it; and then become hungry, and is capable of *Marle* againe as it was before at the first.

And by this also you may see the very cause for which it is good not to sow your marled land continually, but to pasture it by turnes, and so give it rest; namely, because the continuall plowing doth exhaust and spend the fat of the *Marle*, leaving the drossie, dry, and fruitlesse parts thereof, to lye and cover the face of your ground; whereas pasturage, through the dunging, treading, and foddering of Cattell, doth increase a new Mould, which mingling it selfe with the dead Mould,

doth

doth in the end give some life and heats unto it. And therefore these Farmers and Owners that have beene at the cost to marle their ground, and will not forbear to till it, but hastning to raise their charge, do thereby utterly strike it with barrennesse, are like to *Æsops* man, who having a Hen that layed him every day a golden Egge, and being greedy to have all the gold at once, did therefore kill the Hen, thinking to have found her belly full of gold, and so was both defrauded of that he looked for, and lost also what he had before. Hitherto of the rature, ordering and marling of this Haifell ground. Generally now for the continuall fallowing and stirring thereof, you must understand, it may neither be fallowed wet, lest it answer more Grasse than Corne, nor yet so dry, that the dead bottome swell up, as in great drowth it will, and swallow the good Mould that lieth above: and therefore bind not your selfe to any precise time of any moneth, but the opportunitie either in *May* or *June*, as you shall find the weather to have prepared it for your desire. In the like temper you ought to stirre it after a showre, after Saint *James* his day, or in the end of *July*, for so will it be dry and hard before the time of sowing, whereas if it be stirred later, every small Raine will distemper it into Dirt or Mire, by reason of the tendernesse thereof, and then can you not fitly bestow your seed upon it.

The Marle Cope ground followeth, which is most commonly (as I said) a stiffe, wet, cold Clay, and not so fit as the former to be marled for Corne, except in some few fleet places thereof, but yet it may serve for Pasture or for Oates; such of them as be marled, must be fallowed fleet or shallow, lest the Marle become

The ordering
of the Marle
Cope ground:

come drowned in the wet: then being marled, they may in dry Summers (and not over-moist Countries) beare Wheat in some mediocritie. Three hundred loads at the most of *Marle* are sufficient for an acre of this kind, and two bushels and a half of Wheat will sow the same, which must be cast above furrow fourteene or twenty dayes before *Michaelmas*. It requireth round, high and narrow Ridges, and that the water-furrowes be stricken somewhat deep, the better to conveigh moisture from the Corne, and that it be left cloddy as much as may be: and yet to say the truth, such as will convert this sort of ground to Tillage, must provide a greater quantitie of rich ground or Greet (as we terme it) and Dounge, than of *Marle* it selfe, to amend this Land withall. But if there be any ground that is light and whining, or weeping, because of Springs that are therein, and therewith doth cast up Rushes, let that be marled upon the green land with four hundred or five hundred loads upon the Acre, about the latter end of Summer; for so will the *Marle* sinke into it, and cast up a sweet grasse for eight or ten yeares together, and untill that the *Marle* be sunke so low, that another sword or crust of earth be grown over it, & then it is fit time to plow it, but yet very fleet and narrow, for so will it bear good Oats; but if it be so wet that you cannot adventure to sow your Wheat upon it, because the Rushes be not killed with this first plowing, then may you sow it againe with Oats, drawing good water-furrowes to draine it, because it will be the wetter for plowing, and thereby the *Marle* also will the sooner lose his force; thus doing, let it lie to Pasture againe.

Rushes.

There be some other grounds of the *Marle* Cope, which carry a sowre Grasse, and the Dyers-Weed,

(com-

(commonly called Greening-weed, and having a great rore thereof, the which also may be amended by three hundred or foure hundred load of *Marle* upon the acre of the green land: for the *Marle* will both rot the rore or vesture thereof, & also enrich the Mould very much; so as it will answer good Pasture twelve yeares after: and when you shall perceive that the *Marle* is well sunk, then may it be Ploughed fleet and narrow, sowed with Oats, and fallowed; so may it both beare good Wheat, if it find a good season, and be the richer a long time after, partly by the benefit of the *Marl*, partly by the roting of the rore and sword, and partly by the dung and water of the Cattell that pasture upon it: for the sweeter the Pasture is, the more Beasts it feedeth, and the more Beasts it beareth, the more it selfe is amended by it.

Touching the fallowing of this ground, great heed is required: for as it swelleth more then the Haifell-ground, if it be taken hard and dry, so it is more grassie then that, or the Sandy-foyle, if you fallow it wet: The season therefore followeth commonly in *April*, or in the beginning of *May*, for to fallow it, and to stirre it about *Midsummer*, or so soon after as the raine shall have prepared it meet for your un-shod Oxen to labour upon it. Many men fearing to hit the right season for this ground in the Spring of the yeare, doe make it ready by a Winter fallow before *Christmas*, and by stirring it before *Midsummer*, if they may; which manner is not to be misliked.

Lastly, commeth the two sorts of Sandy-ground, and gravelly-mould; the one being to be ordered much after the Haifell-mould, saving he would have somewhat more *Marle*, and also would be favoured more in the

The ordering
of the Sandy-
moulds.

often tillage, than it: for the Haifel-mould will bear or endure more tillage than the Sand. But this last sort of sandy-ground, being a very staring Sand (as wee use to call it) for much of it will bear Heath, being of it selfe very barren, and very fleet or shallow Mould, and over hot and dry, and by reason of that extremitie, is unfertill, except it be Marled very plentifully. And therefore when you breake up this ground, Plough it as deepe as you may, not fearing to cast downe the best Mould thereof, because the *Marle* will pierce thorow, and sink down into it. An acre of this ground requireth five hundred or six hundred loads of your *Marle* at the least. Sow alwayes under-furrow about *Michaelmas*, with two bushels and a halfe upon the acre, which it wil better carry than the Haifel ground: for although the straw be small, yet will it be harder, and stand better than that of the other. The worme whereof I speake, will be busie with that, that groweth on this sort of ground, untill that the heat thereof be somewhat asswaged by the *Marle*. If your ground be hilly, make your Water-furrowes in such sort, as I have said before, for the saving both of your *Marle* and Mould; harrow it very little, leave it as cloddy as you may. After that you have taken a Crop from it, fallow that Wheat Gratten or Stubble in *May*; after that stirre it also, and then about *Michaelmas* sow it with Wheat again: for it is not yet rich enough to beare you good Pease. This done, let it rest foure or five yeares, and if it send up any plenty of Broome, cut or pull them when they be of some mean bignesse, but Plough not the ground untill it have taken such rest; and after it, yon may well breake it up of new, and sow it with Oats: which Oate-gratten or Stubble, you

you must Summer-fallow, when it is at the Harvest: and then if you desire to have it in good heart, you must Marle it with three hundred or foure hundred loads upon the Acre againe. After this Crop thus taken, rest it five or six yeares, and then take one Crop more of Oats from it, and after a Summer-fallow, sow it with Wheat, and suffer it to lye a Wheat Gratten or Stubble, till it shall have rested as before is appointed for the Haifell-ground, and so it will be the better thirtie or fortie yeares after the Marling. Wee have in this Weald a sandy and gravelly ground that is wet and weeping, the which is scarcely worth the Marling, except the nearnesse of the *Marle*: and thereby the small cost and charge thereof may intice a man to bestow the cost upon it with *Marle*, and then the best way is to Marle upon the greene Land, or upon a fallow, with five hundred loads or more upon the Acre, or rather to take the profit thereof by Pasture then by Tillage: for it will hardly bare good Corne, which is soone killed with the wet vapour that is continually sent up from the wet Springs that lie under it. This sort of ground is to be fallowed, when it is both hard and dry, because it swelleth not as doth the Haifell-Mould, and may therefore be taken in *June*, if former fair weather bring it not to a dry season; and it is to be stirred also after a showre, in the like plight as the Haifell-Mould before. Your marleable grounds being ordered in this wise, severally set downe for each kind of them, will continually stand fruitfull either for Corne or Pasture: and albeit the high prices which Corne hath of late yeares carried, may allure some men to sow Corne incessantly, and thereby to spend their *Marle*, and to choke their arable in the

end, yet I doubt not but the wiser sort can see that it is much better to maintaine their grounds heartie and in good plight for ever, than to rayse a short gaine, that will bring a long & perpetuall losse upon them, the rather also, because that Butter, Cheese, and the flesh of Beeffe and Mutton, be advanced in price equally, if not beyond Wheat, Rye, Barley, and the other Graines. Howbeit, a good Husbandman will make his profit of them both : for if he have one hundred, or one hundred and twentie Acres of this Wealdish arable, he will so Marle & manure them, that dividing his land into five or six equall parts, he may continually Plough twenty, or five and twenty Acres for Corne, and yet lay to Pasture the rest by turnes : so that by the helpe of his Marle, his Land shall be continually rich & profitable, both in the one and other of them. And thus I have spoken of the Weald, describing the nature and property thereof : so may every man of discretion and judgement, which shall meet with earth of the same quality and condition (in what part of this Kingdome soever) make application of these Rules before rehearsed, and no doubt but the profit will make both the labour and cost profitable and pleasant.

The severall wayes, according to the opinions of Writers, and the certain wayes, according to the experience of Husbandmen, for the destruction of Moles or Moales, which digge and root up the earth, and how to reduce and bring the ground to the first goodnesse, having been spoyled by them.

IT is needlesse either to describe the nature and quality of this Vermine, or the injury and hurt which they do to the Husbandman, Gardiner, and Planter, since no Country is exempt from their annoyance: but touching the remedies, they are of greater secreisie, and therefore I thought good in this place to insert them.

The ancient writers are of divers opinions touching the manner of destroying this creature, and therefore have left unto us sundry Medicines how to worke the same: amongst the which, one writeth, as an approved experiment, that if you take Walnut-shells, & fill them with Brimstone, Chaffe, and Petrofin, and then setting them on fire, put them into holes or trenches, thorow which the Moale passeth, and the very smell or stinke thereof will poyson them; so that if you dig, you shall find them dead in their holes.

Another affirmeth, That if you take Brimstone, and danke stinking litter of horses, and burn it in the holes or haunts of the Moales, it also will impoyson them; so as you shall find they will come out of their Caves, and lye dead upon the greene grasse.

A third affirms, That if you take greene Leeks, Garlick, or Onions, and chopping them grossely, thrust it into the holes, & the very fume or savour thereof will so astonish and amaze the Moales, that they will presently forsake the earth, and falling into a trance, you

may take them up with your hands. Now there is not any of these medicines which can be dis-allowed : for there is no doubt but that they will worke the effects spoken of, if the Moale can be brought to take a full sent thereof : but it is a Vermine curious of sent, and passing quick of hearing, & being in a spacious ground, will prevent these baits ; and therefore they are rather to be applyed for gardens or little grounds, where there is but a Moal or two, than in large fields, where there be many hundreds.

To conclude, for this matter of medicines, or for the helping of gardens, hop-yards, or any small spot of ground, there is not any thing held more availeable, than to sow in that place the herb called *Palma Christi*: for it is found by certain experience, that wheresoever that herbe groweth naturally of it selfe, or otherwise, is either purposely sowne or planted, there in no wise will any Moale abide.

Thus much I thought good to shew you for the use of medicine, and for clearing of smal grounds: now for the annoyances which happen to great, large, and spacious fields, through the multitude of Moales; there is only three absolute wayes for the curing of the same.

The first is, in the moneths of *March* and *April*, to view where they cast, and go about to make an extraordinary great hill, in which they build their nests, which is known by the newnesse of the Mould; then look for the new trench which leadeth to the same; for as she goeth she returneth: then with your Moal-spade open the trench in divers places, and then very still and silently, and observing to take the wind, to prevent both hearing and smelling, watch the Moale as she goeth or returneth, which is, Morning, Noone, and Evening, and as soone

soone as you see her cast, strike her with your Moale-speare, made of many sharpe pikes, and so cast her up, and kill her. Thus have I seene by one man an hundred destroyed in one day.

The next infallible way for the destruction of Moales is: If you can by any possible means bring in water to over-flow and wash your ground, and as soone as the earth is wet over, the Moales will come forth of themselves, and you may gather them up with your hands at pleasure.

The last (indeed as much approved as any) is to take a live Moale in the moneth of *March*, which is their bucking or ingendring time, & put it into a deep brasse Bason, or other deep smooth Vessell, out of which the Moale cannot creep, and then at evening bury it in the earth up to the brimme, and so leave it, and the imprisoned Moale will presently begin to shrike, or complaine, or call, so that all the Moales in the ground will come to it, and tumbling into the Vessell, they are prisoners also, and the more prisoners, the greater will be the noise; and the more noise, the more Moales will come to the rescue, so that I have seene 50. or 60. taken in one night, and in one Vessell or brasse Kettle.

Now having thus learned how to destroy the Moals, it is meet you also know how to prevent the comming in of forraign Moales; because though you keep your ground never so cleane, yet if your next neighbour be an ill husband, his field may soon impoyson yours again: therefore to prevent the comming in of any forraigne Moale, make but little Furrows or Trenches about your ground, and scatter in them small round bals made of Hemp-seed, or Hemp-seed and *Palma Christi* beaten together, and you shall not need to feare the

C 4

comming

conming in of any neighbour-Moales, how many soever there be about you.

Lastly, for the reducing or bringing the ground to the first perfection againe (for howsoever some Husbandmen say, Moe Moale-hills, moe ground ; yet 'tis certaine, that moe Moale-hills, lesse good ground) for never was yet sweet grasse scene on a Moale-hill; therefore to bring it to perfection, which I mean to be meadow-ground, or ground to be mowne, which Moale-hills cannot be: you shall first with a sharp paring-shovell, pare off the swarth about three fingers deepe, for feare of hurting the roots of the grasse ; and then the swarth taken off, digge away the rest of the Mould, and scatter it as small as you can round about the hill, then take the greene swarth, and cutting it artificially, lay it close, and fast, and levell, where you tooke away the Mould, as if there had never beene Hill there: and thus doe to all your Hills, though they be never so innumerable ; and after all your ground is levelled, as soon as the first shore falleth, run all your ground over with a paire of back-Harrowes, or an Harrow made of a Thorne-bush, and it will breake the Mould as small as ashes, which will so comfort and refresh the root of the grasse, that it will grow in infinite abundance ; and the fowrenesse which was caused by reason of the Hills, will come againe to a perfect sweetnesse, and the meadow will be more fruitfull then before by many degrees. And thus much for the destruction of Moales, and the reducing of the earth to his first goodnesse.

